**同轴电缆中电磁波的传输与**

**金属中超声波的传输预习报告**

**原始数据记录表**

1.传输线中脉冲信号传输和反射的观测，信号延时测量的仪器误差取示波器时间轴最小分度值的1/2,Δt示波器=

|  |  |  |  |
| --- | --- | --- | --- |
| 同轴电缆输出端状态 | 信号幅度 | 信号延时 | 波形示意 |
| 开路 |  |  | 输入端 |
| 输出端 |
| 短路负载 |  |  | 输入端 |
| 输出端 |
| 匹配负载 |  |  | 输入端 |
| 输出端 |

2.超声波测量（适当调整示波器分度值，估算不确定度。）

*D*=39.40mm，*R*1=30.00mm，*R*2=*H*=60.10mm，Δ*H=*Δ*D*=Δ*R*1=Δ*R*2=0.02mm，*ρ*=2700kg/m3

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 实验组号 | 直探头-纵波 | 斜探头-横波 | | | 可变探头-表面波 | | |
| 底面波 |  |  |  | 探头位置或移动距离 | 角度约(°） | 表面波位置或移动 |
| 1 |  |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |  |
| … |  |  |  |  |  |  |  |

3.超声波探伤（适当调整示波器分度值）

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 实验组号 | 直探头-扩散角 | | | 直探头测缺陷C | | 斜探头测缺陷D的深度 | | |
|  |  |  | 底面波 | 缺陷波 |  |  |  |
| 1 |  |  |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |  |  |
| … |  |  |  |  |  |  |  |  |